



Prevention of Influenza in High-Risk Groups: What Are the Vaccine Options and Strategies?

Gregory A. Poland, MD
**Mary Lowell Leary Emeritus Professor of
Medicine**
Distinguished Investigator, Mayo Clinic
Director, Mayo Vaccine Research Group
Mayo Clinic
Rochester, MN

YouTube

Search for: Jimmy Kimmel and Dr. Poland and Handwashing



The Goal

- Get influenza vaccine into the arms of the high-risk subject – *annually*
- Consider “cocooning” strategies whereby caretakers and those living in the home are also immunized
- Note that Medicare pays for annual influenza vaccine!
- *Sounds easy, so why doesn't it work?*

Who is High-Risk?

- Everyone who, on the basis of epidemiological data or clinical experience, is at elevated risk of increased morbidity or mortality
- This can be due to :
 - Age
 - Co-morbid conditions (BMI >40)
 - Medications or other treatments
 - Pregnancy
 - Other factors

High risk conditions

Respiratory disease

- Asthma
- Chronic bronchitis and emphysema
- Other pulmonary diseases

Cardiac disease

- Atherosclerotic heart disease
- Cardiomyopathy/CCF
- Congenital heart disease

Neurodevelopmental disorders

- Cerebral palsy
- Musculodystrophy
- Cognitive disorders

Metabolic disorders

- Diabetes

Haematological diseases

- Sickle cell anaemia
- Thalassemia major

Immunocompetency disorders

- HIV/AIDS
- Chemotherapy
- Transplant pts on immunosuppressants
- Chronic corticosteroid therapy

Chronic renal insufficiency on dialysis

Chronic liver disease, esp. with cirrhosis

Morbid obesity

Pregnancy

Requiring influenza vaccination for health care workers: seven truths we must accept

Gregory A. Poland^{a,b,*}, Pritish Tosh^{a,b}, Robert M. Jacobson^{a,c}

^a Mayo Vaccine Research Group, 611 C Guggenheim Building, 200 First Street, SW, Mayo Clinic and Foundation, Rochester, MN 55905, USA

^b Program in Translational Immunovirology and Biodefense, Department of Medicine, Department of Pediatric and Adolescent Medicine, Mayo Clinic, Rochester, MN, USA

^c Department of Pediatric and Adolescent Medicine, Mayo Clinic, Rochester, MN, USA

Available online 13 January 2005

Abstract

In this paper we outline the seven primary truths supporting the call for requiring influenza immunization of all health care workers. We view this as a serious patient safety issue, given the clear and compelling data regarding the frequency and severity of influenza infection. In addition, clear-cut safety, efficacy, economic, legal, and ethical platforms support the use of influenza vaccine. Unfortunately health care workers have demonstrated, over almost 25 years that they are unwilling to comply with voluntary influenza immunization programs utilizing a variety of education and incentive programs, at rates sufficient to protect the patients in their care. We suggest that an annual influenza immunization should be required for every health care worker with direct patient contact, unless a medical contraindication or religious objection exists, or an informed declination is signed by the health care worker. High rates of health care worker immunization will benefit patients, health care workers, their families and employers, and the communities within which they work and live.

© 2005 Elsevier Ltd. All rights reserved.

Keywords: Communicable disease control; Health personnel; Influenza vaccine

1. Introduction

Influenza causes worldwide yearly epidemics resulting in 250,000–500,000 deaths [1]. The most efficient method of preventing these annual outbreaks and resulting morbidity and mortality is by the use of pre-exposure immunization. Because those most vulnerable to the complications of influenza, including death, congregate around health care workers by virtue of attending clinics, hospitals, and offices, an important method to decrease exposure to those most vulnerable is to immunize health care workers. The Centers for Disease Control and Prevention (CDC) has recommended influenza vaccination for all health care workers since 1981. Since that time, health care organizations across the country have established voluntary programs to provide influenza vaccine to health care workers in order to protect the lives and health

of their patients. The response thus far has been dismal, as only 36% of US health care workers received influenza vaccination in 2002 [2]. Even among health care centers utilizing highly organized and aggressive campaigns to promote immunization of health care workers, 30–50% remain unvaccinated. After more than two decades of voluntary trial and error programs, the time has come to take the next step in addressing this public health challenge by requiring influenza immunization of all health care workers. Here, we provide the data and rationale for such a requirement. We suggest that an annual influenza vaccine should be required for every health care worker with direct patient care activities, unless a medical contraindication to influenza immunization exists, a religious objection to immunization exists, or an informed declination is signed by the health care worker. This is identical to the highly successful method utilized in the hepatitis B immunization requirement for health care workers.

Since the initial Centers for Disease Control and Prevention (CDC) recommendation, the scientific understanding of

➤ Poland GA, Tosh P, Jacobson RM. Requiring influenza vaccination for health care workers: seven truths we must accept. *Vaccine*. 2005 Mar 18;23(17–18):2251–5.

* Corresponding author. Tel.: +1 507 284 4456; fax: +1 507 266 4187.

E-mail address: poland.gregory@mayo.edu (G.A. Poland).

Position Statements – Mandatory Influenza Vaccination for HCPs

- **AAFP: American Academy of Family Physicians**
- **AAP: American Academy of Pediatrics**
- **ACP: American College of Physicians**
- **AHA: American Hospital Association**
- **AMDA: American Medical Directors Association**
- **APhA: American Pharmacists Association**
- **APHA: American Public Health Association**
- **APIC: Association for Professionals in Infection Control and Epidemiology**
- **IDSA: Infectious Diseases Society of America**
- **NFID: National Foundation for Infectious Diseases**
- **NPSF: National Patient Safety Foundation**
- **SHEA: Society for Healthcare Epidemiology of America**

Easiest Way To Remember

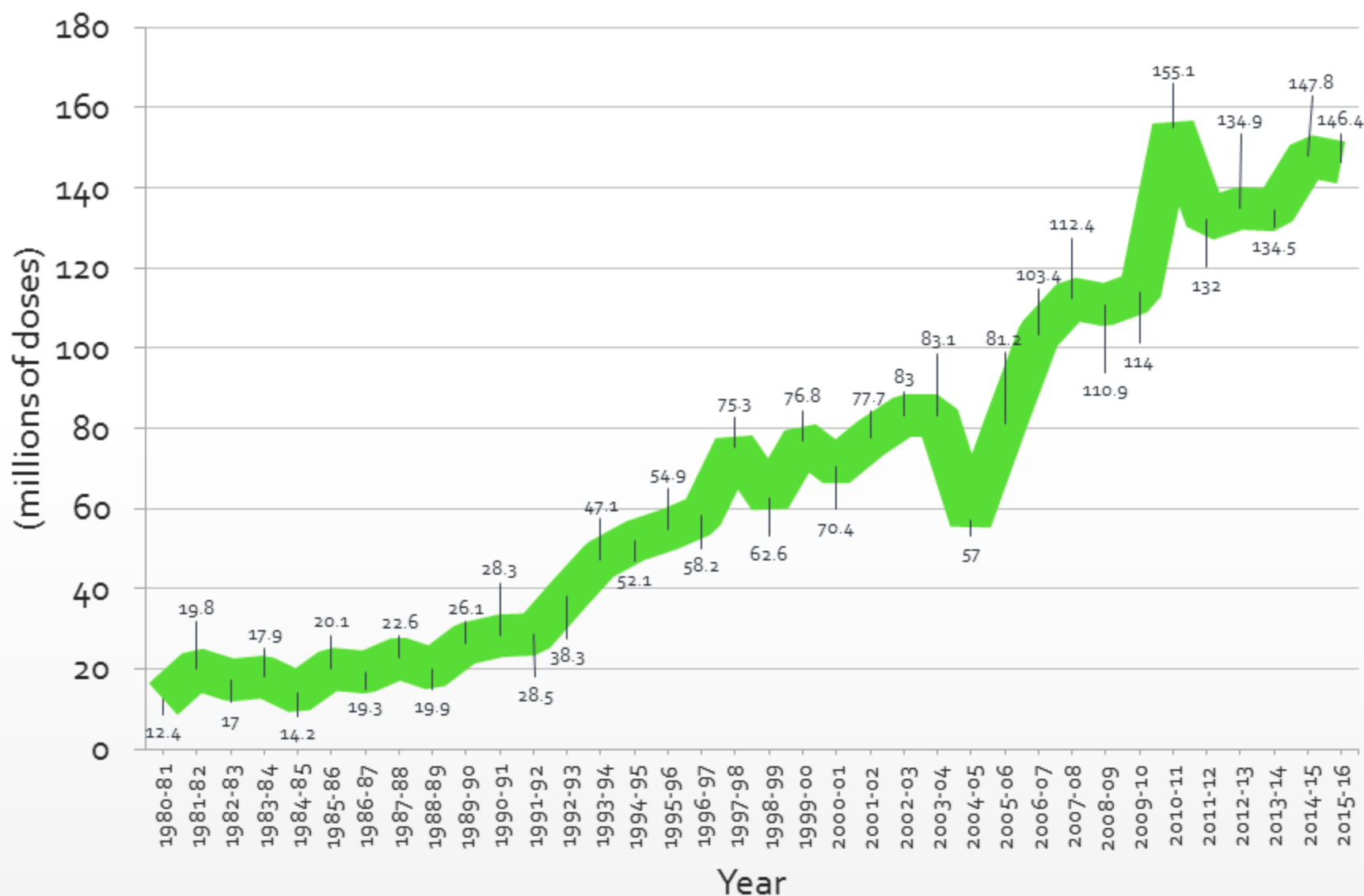
- Who should get influenza vaccine?
- **EVERYONE \geq 6 months of age benefits from flu vaccine, unless they have a contraindication**
 - GBS within 6 weeks of flu vaccine
 - Anaphylactic reaction to flu vaccine component
 - Pregnancy is an *indication*, not a contraindication!
- **Now official CDC/ACIP policy as of February 2010**

Easy Way to Remember

1. Who needs a
flu vaccine?

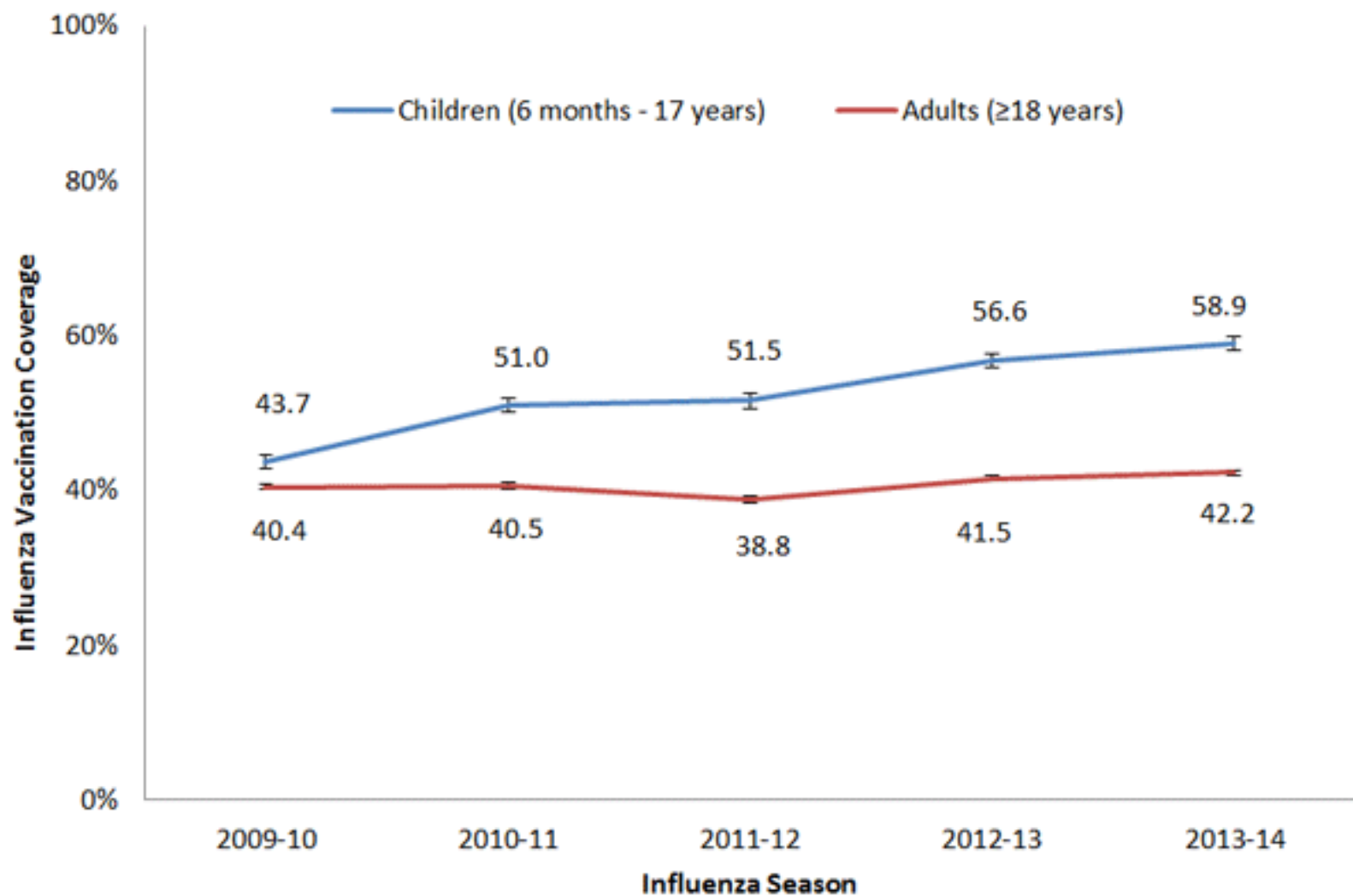
- a) You
- b) You
- c) You
- d) All of the above

Influenza Vaccine Doses Distributed in the United States, By Season



Graphic by CDC, data reported by influenza vaccine manufacturers and selected influenza vaccine distributors.

**Figure 1. Seasonal Flu Vaccination Coverage,
by Age Group and Season, United States, 2009-2014**



Error bars represent 95% confidence intervals around the estimates.

The 2009-10 estimates do not include the influenza A (H1N1) pdm09 monovalent vaccine.

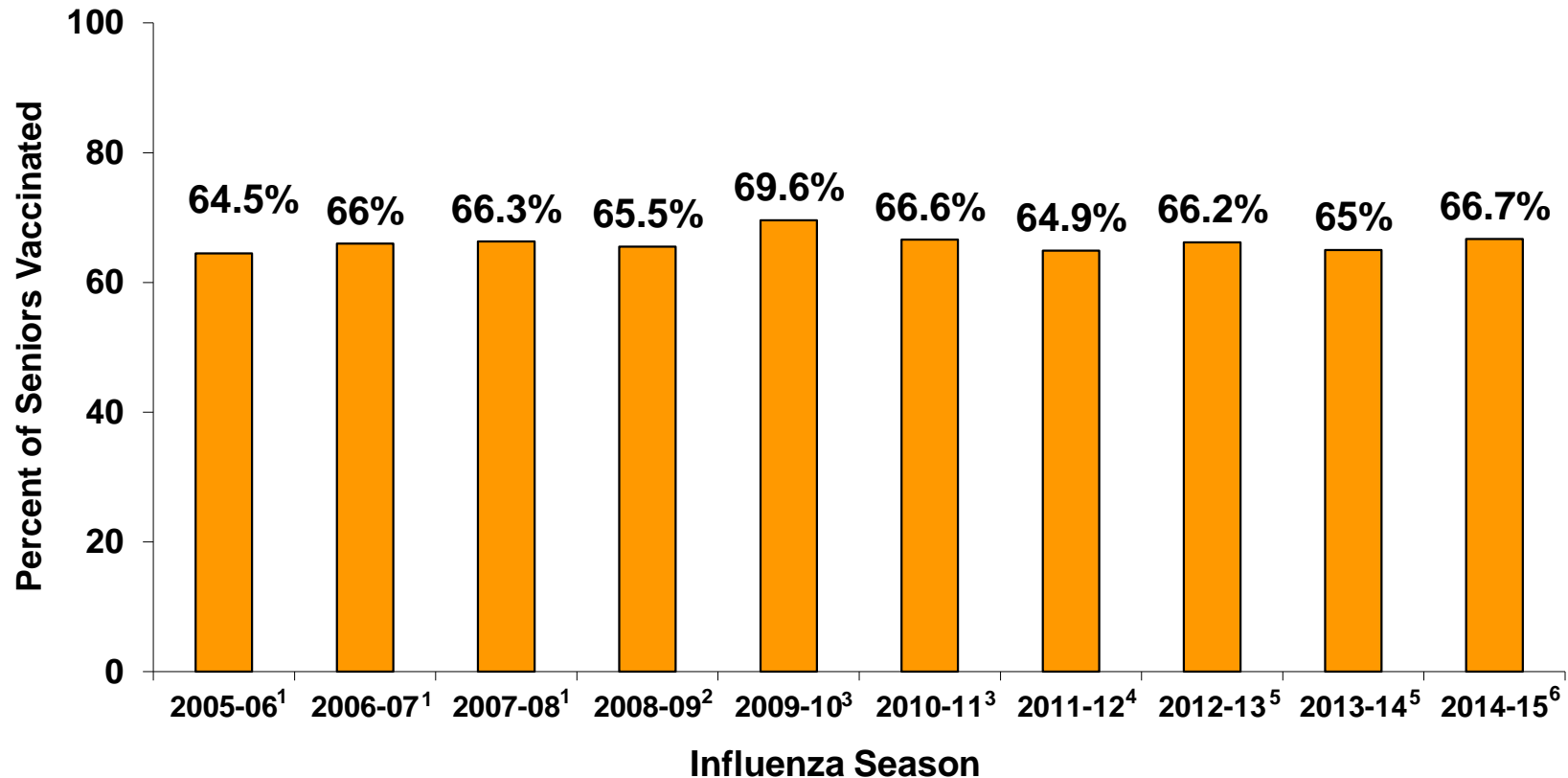
Starting with the 2011-12 season, adult estimates reflect changes in BRFSS survey methods: the addition of cellular telephone samples and a new weighting method.

Influenza Immunization Rates

Risk Group	Percent Coverage	Year	Data Source
≥65 yrs	65%	2013–2014 season	BRFSS
Pregnant women	52%	2013–2014 season	MMWR 2014
HCP	75%	2013–2014 season	MMWR 2014

HP2020 goals: 90% for seniors and HCPs, 80% for PG women

Influenza Vaccination Coverage Among Seniors



References: 1. CDC. *MMWR*. 2009;58(RR-8):1-52. 2. CDC. *MMWR*. 2010;59(RR-8):1-62. 3. CDC. *MMWR*. 2013;62(S-03):65-68. 4. CDC. http://www.cdc.gov/flu/fluview/coverage_1112estimates.htm. Accessed January 29, 2016. 5. CDC. http://www.cdc.gov/flu/fluview/coverage_1314estimates.htm. Accessed January 29, 2016. 6. CDC. <http://www.cdc.gov/flu/fluview/coverage-1415estimates.htm>. Accessed January 29, 2016.



Impact of Influenza

The “Silver Tsunami” Effect

Leading Causes of Hospitalization in the Elderly—United States, 2009–2010¹

Influenza has
clinical
connections to 6 of
the top 10 causes of
hospitalization
among seniors (in
red)^{2,3}

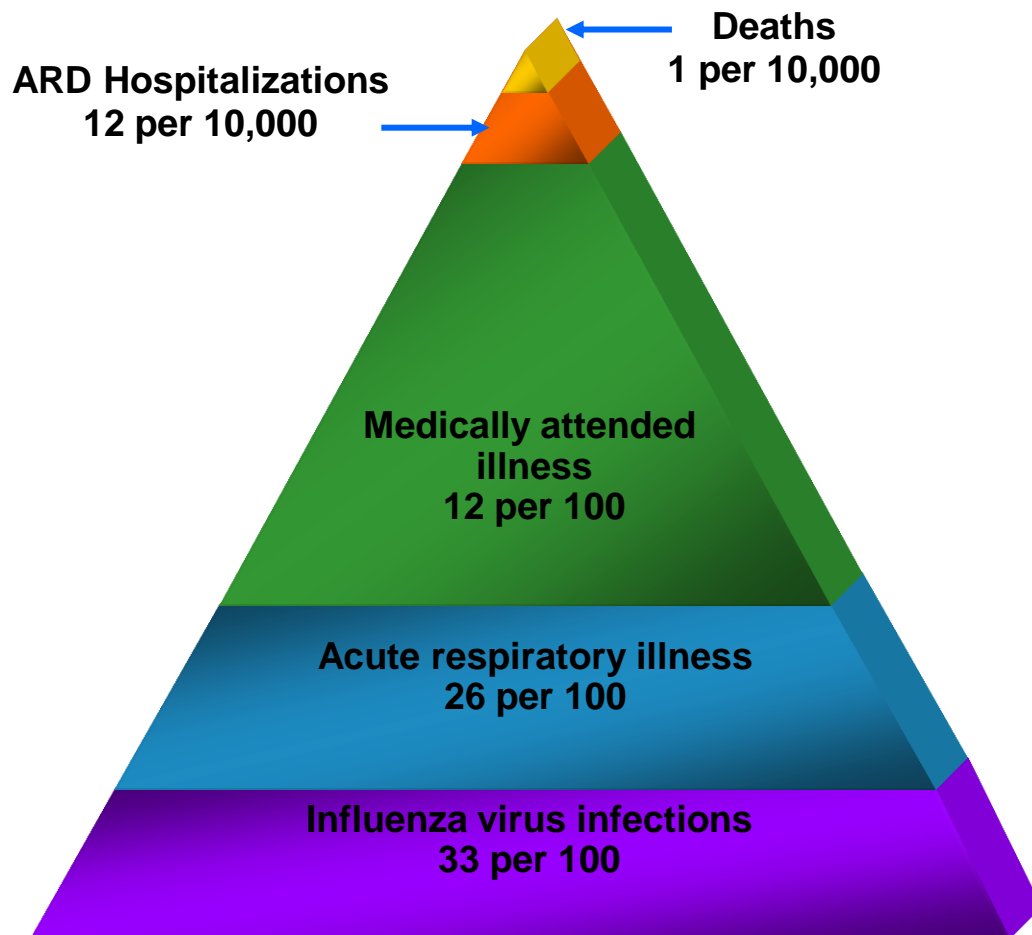
Discharge diagnosis	No. of Discharges
Ischemic heart disease (includes heart attack)	829,000 (372,000)
Injury	818,000
Heart failure	748,000
Stroke	654,000
Cancer, all	621,000
Pneumonia	618,000
Osteoarthritis	592,000
Cardiac arrhythmias	542,000
Septicemia	483,000
COPD ^a	464,000
Complications of care and adverse effects	438,000

References: 1. National Center for Health Statistics. *Health—United States, 2013*. Table 96, pp 301-303. <http://www.cdc.gov/nchs/data/hus/hus13.pdf>. Accessed January 29, 2016. 2. CDC. http://www.cdc.gov/flu/about/disease/high_risk.htm. Accessed January 29, 2016. 3. Wang CS, et al. *Vaccine*. 2007;25(7):1196-1203.

Impact of Seasonal Influenza – US

Infection	82 million
Illness	65 million
Medically attended	30 million
Hospitalized	200,000
Death	12,000 - 36,000

Annual US Morbidity and Mortality



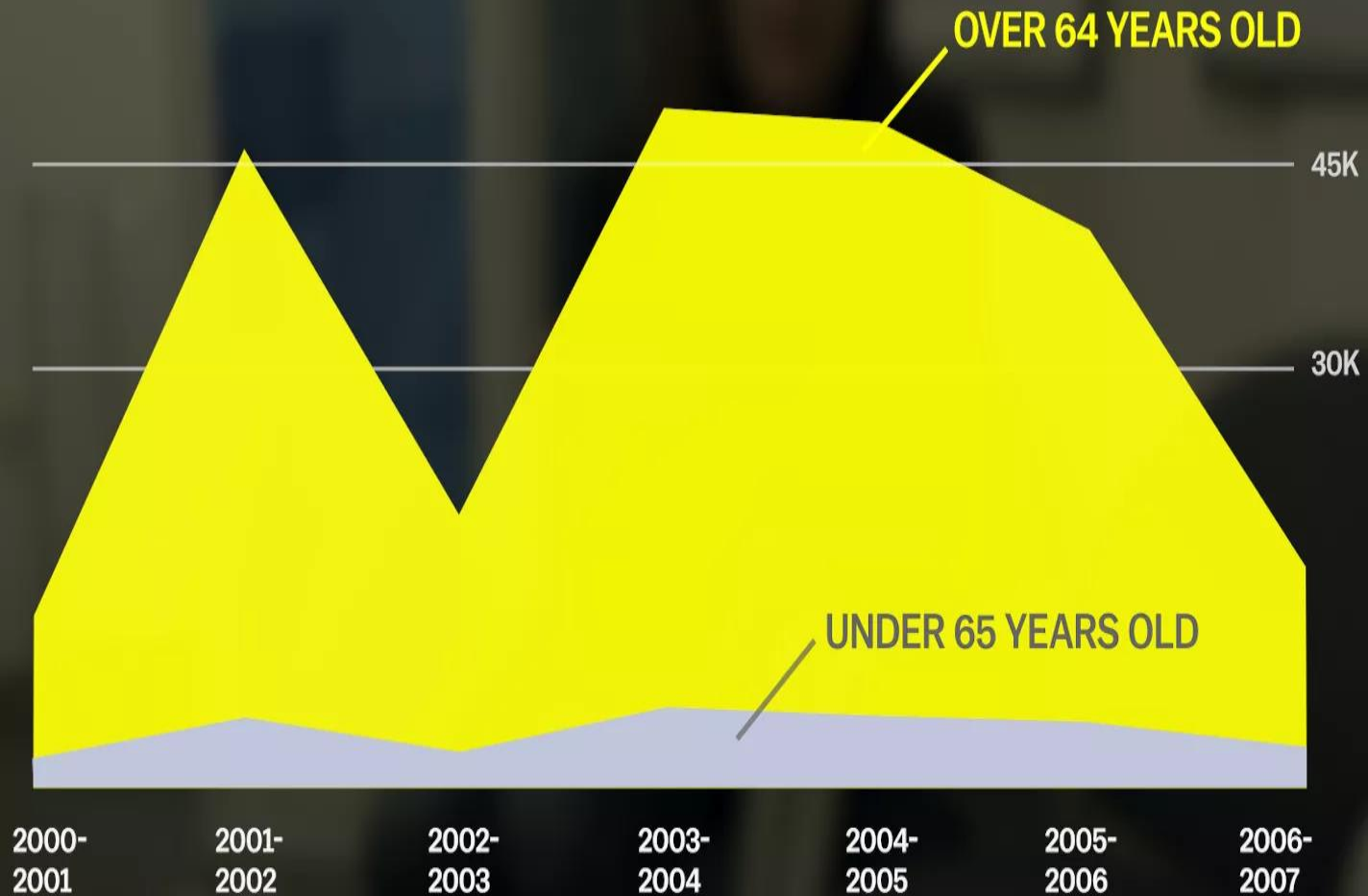
50% – 60%
OF ALL INFLUENZA-
RELATED HOSPITALIZATIONS²



90% OF INFLUENZA-
RELATED
DEATHS²

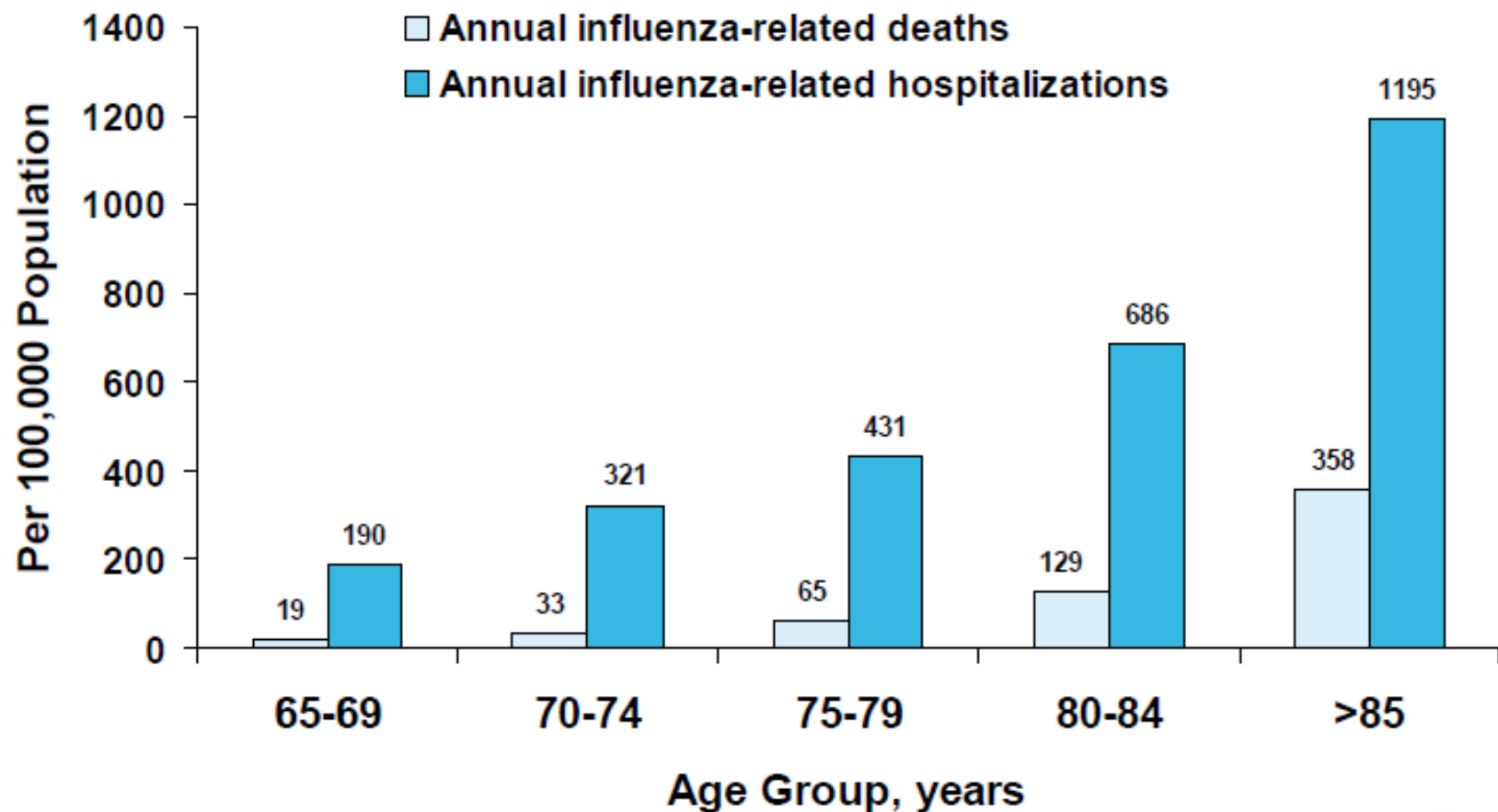
Flu-related deaths in the US

CDC MORBIDITY AND MORTALITY WEEKLY REPORT

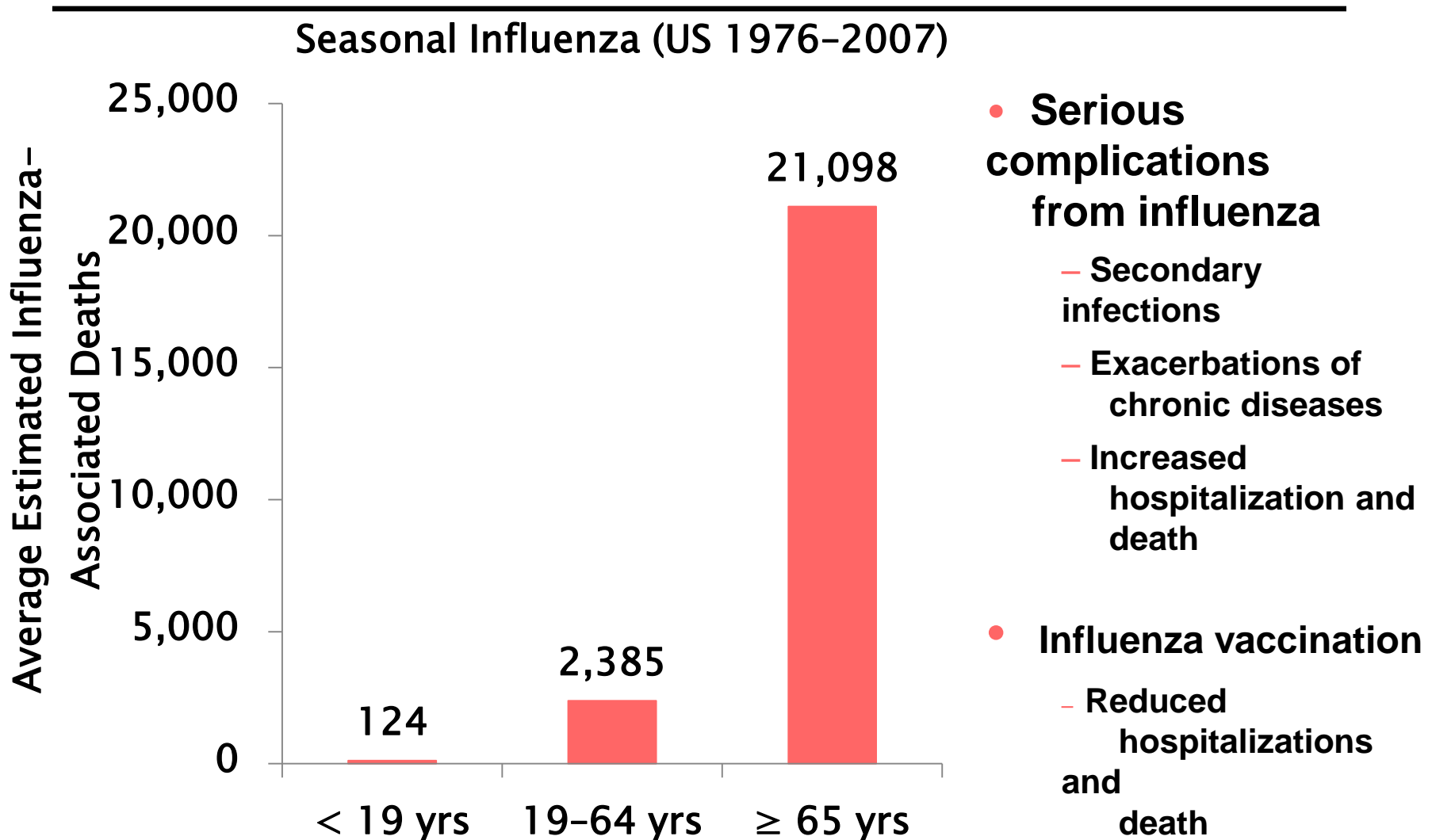




CDC: Influenza-associated hospitalization and death rates, by age group, 1976–2000

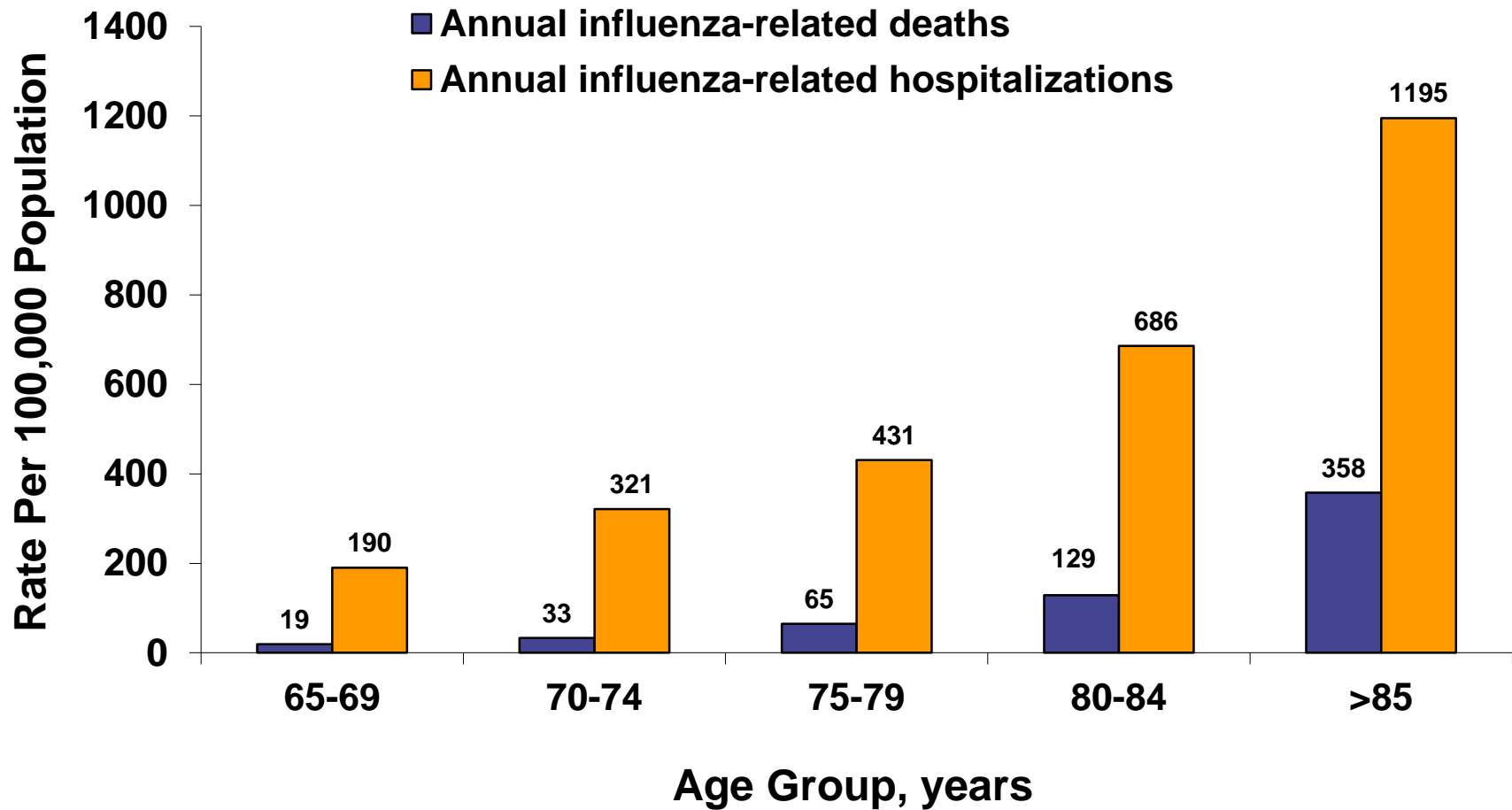


Influenza in the Elderly





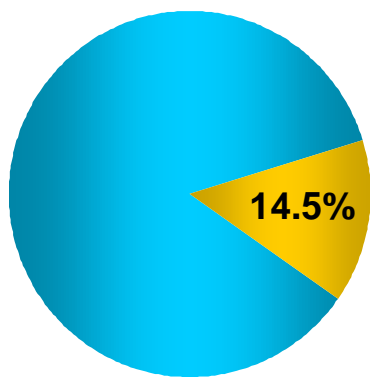
Influenza-Associated Hospitalization and Death (1976-2000)¹



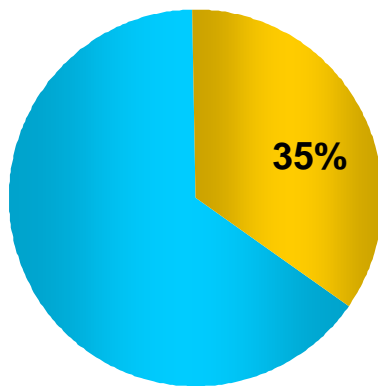
Reference: 1. Thompson WW, et al. *J Infect Dis.* 2006;194(suppl 2):S82-S91.

A Disproportionate Share of the Disease Burden

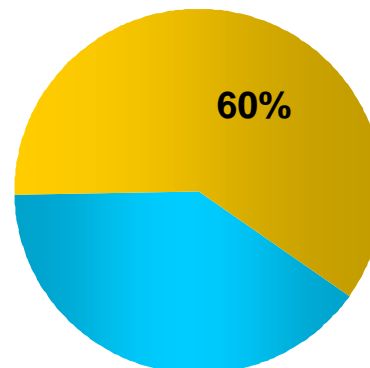
Seniors Represent ...



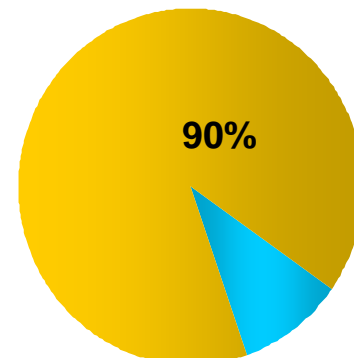
Of the US population¹



Of all hospital admissions²



Of influenza-related hospitalizations³



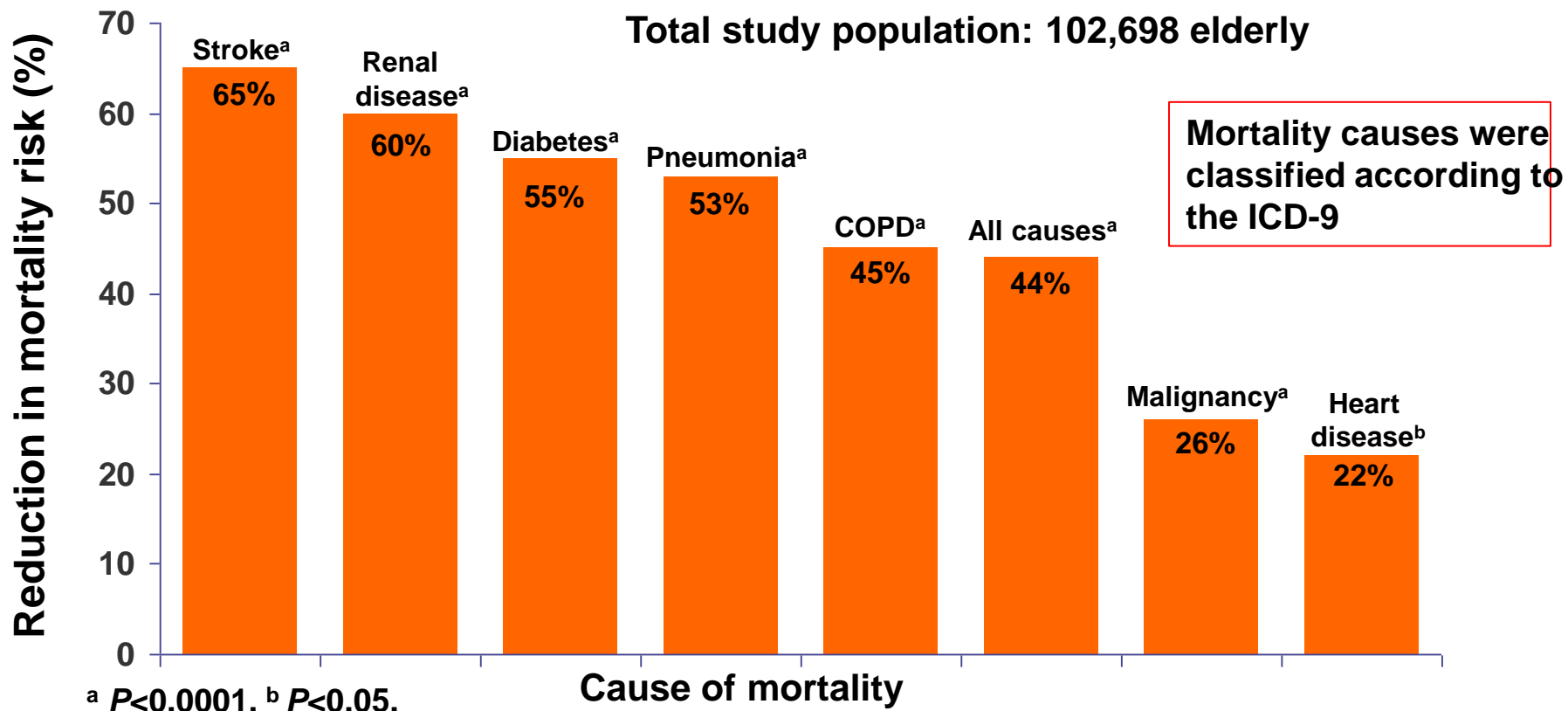
Of influenza-related deaths⁴



Influenza Vaccination and Its Impact on Major Cause-Specific Mortality¹

- Study in Taiwan in >100,000 residents ≥ 65 years of age
- Objective: “To understand more thoroughly whether influenza vaccination was effective for reducing major cause-specific mortality (other than lung diseases) in a county-wide population study with large sample sizes”
- Six of 8 major causes of mortality evaluated were not directly related to lung disease
- >10-month follow-up of 35,637 vaccinated and 67,061 unvaccinated persons ≥ 65 years of age
- High-risk was defined as having a chronic disease, residence in long-term care, or a history of recent (prior 3 years) hospital admission
 - 80% of the full study population were not classified as high-risk

Influenza Vaccination and Its Impact on Major Cause-Specific Mortality



“Influenza vaccine is strongly associated with a lower mortality risk, not only for pneumonia and COPD, but also for other major cause-specific mortalities, which indicates that influenza vaccination might reduce the domino effects of complications from influenza in the elderly.”

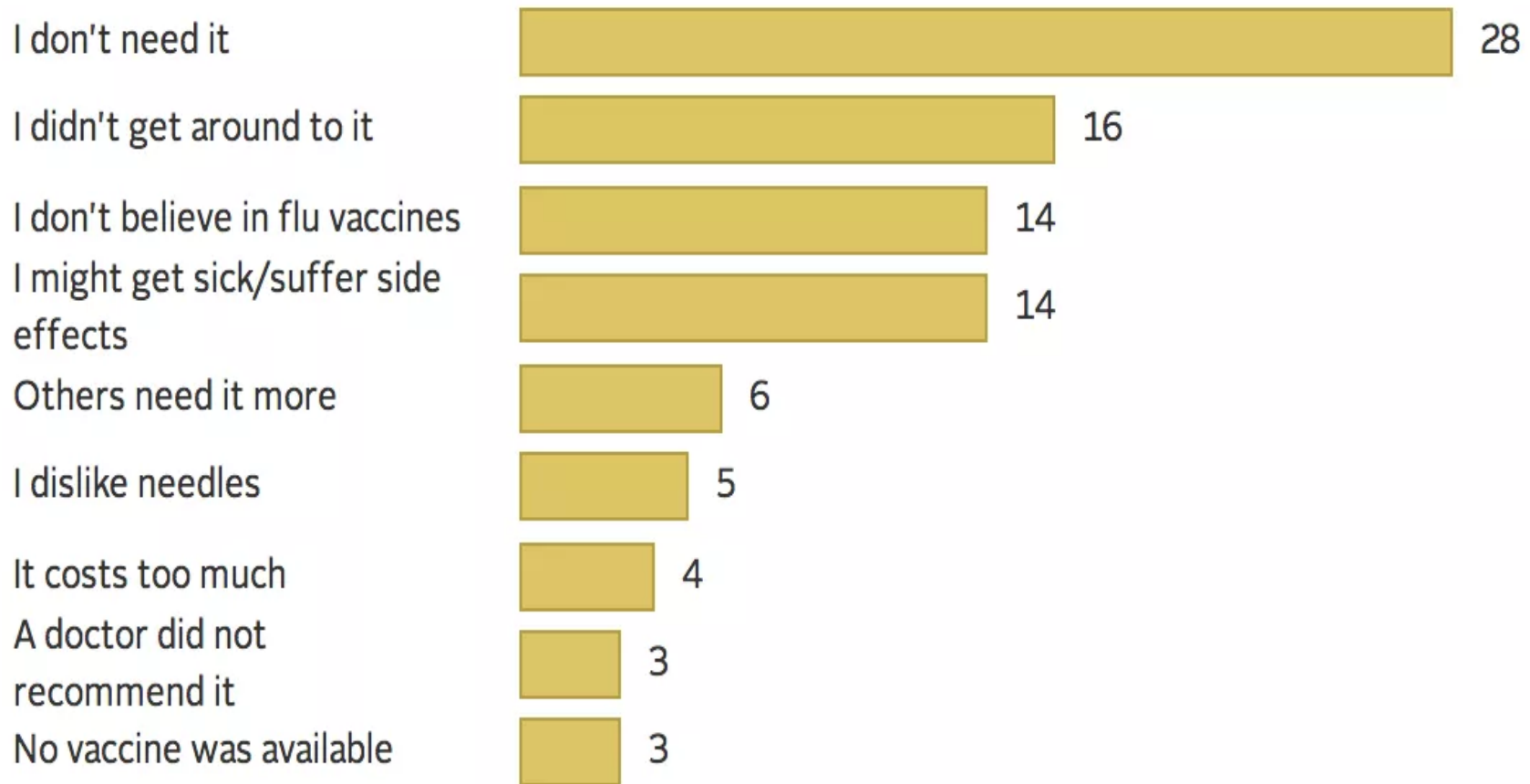


Influenza Vaccines

A New Era of Personalized Vaccinology



Why people don't get flu shots



The Flu Vaccine Doesn't Cause Flu!



Influenza Vaccine Side Effects

Symptom	Vaccine (%)	Placebo (%)	<i>P</i>
Fever	5.7	4.2	.68
Cough	6.6	5.1	.62
Coryza	13.2	10.2	.27
Fatigue	8.0	7.7	.82
Malaise	7.2	6.3	.83
Myalgia	4.8	4.2	.84
Headache	6.9	7.6	.99
Any symptom	27.7	22.9	.21
Sore arm	20.1	4.9	<.001*

Poland, Nichol, et. al. *JAMA* 1990;264:1139-1141.

Newer Reasons to Get Flu Vaccine

- Increasingly virulent viral strains
- Increasing antiviral resistance
 - Seasonal (10% of H1N1 in 2007–2008, U.S. to oseltamivir)
 - H5N1
- Evidence of less severe H5N1 infection in those immunized with H1N1 seasonal vaccine
- (For HCWs) Professional ethics (often mandatory)

Influenza Vaccine and the Elderly

- Respond least well to flu vaccine with a significantly reduced antibody response
- Compared with younger subjects, elderly have seroconversion rates only 25% as robust for H1 and B antigens, and 50% for H3
- Only one randomized, double-blind, placebo-controlled trial in the elderly
 - 58% efficacy against serologically confirmed flu
 - 47% efficacy against clinical influenza

So persons age 65 years and older have among the highest rates of complications and death due to influenza; yet respond the least well to influenza vaccine.

What to do?

Option 1: High Dose Fluzone (HD-TIV)

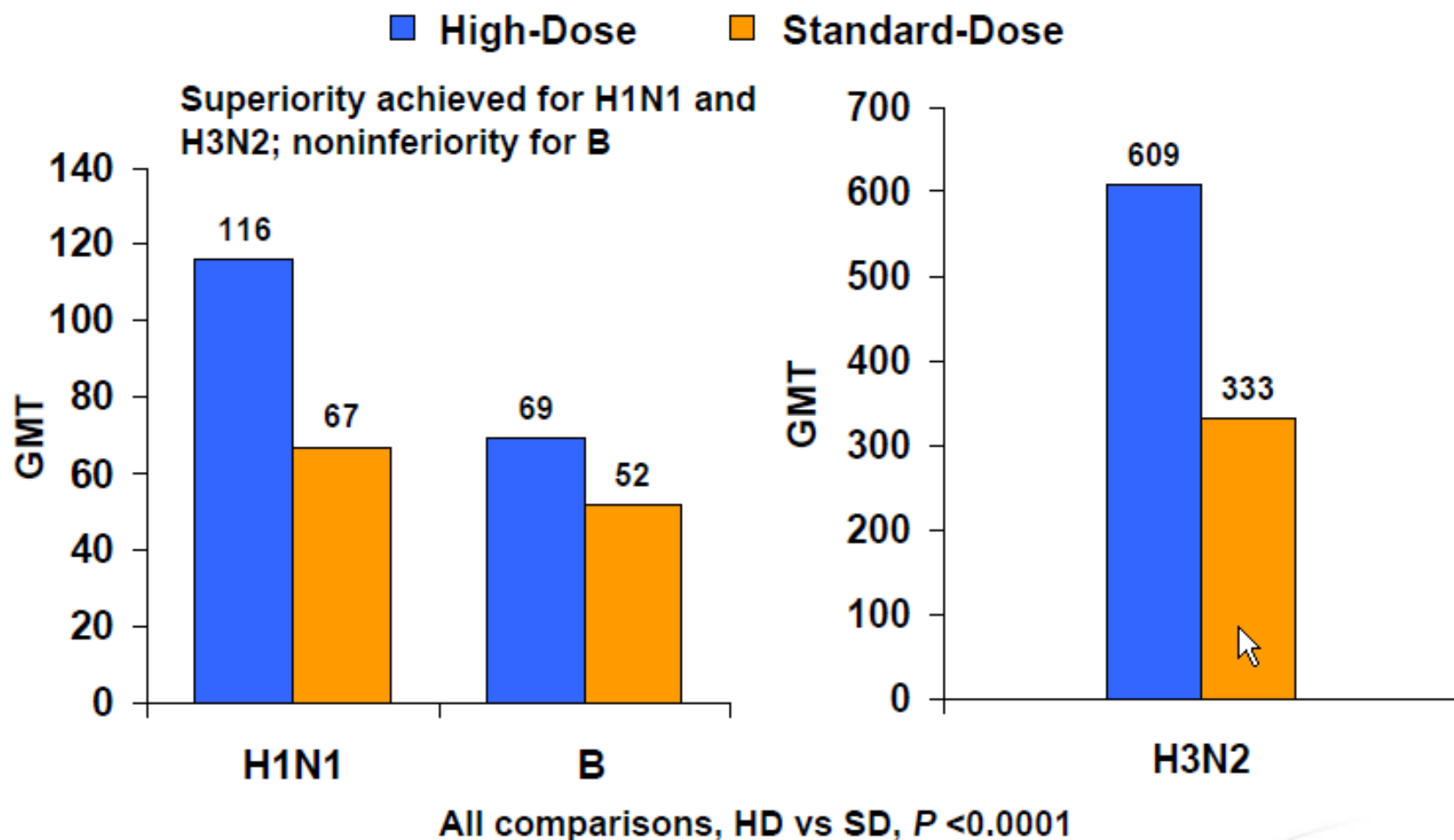
- Licensed in US, Dec 2009
- Age 65 years and older
- Trivalent, inactivated
 - 60 mcg of each antigen (4x usual dose)
 - Does not contain thimerosal
 - Otherwise identical to TIV

HD-TIV Immunogenicity

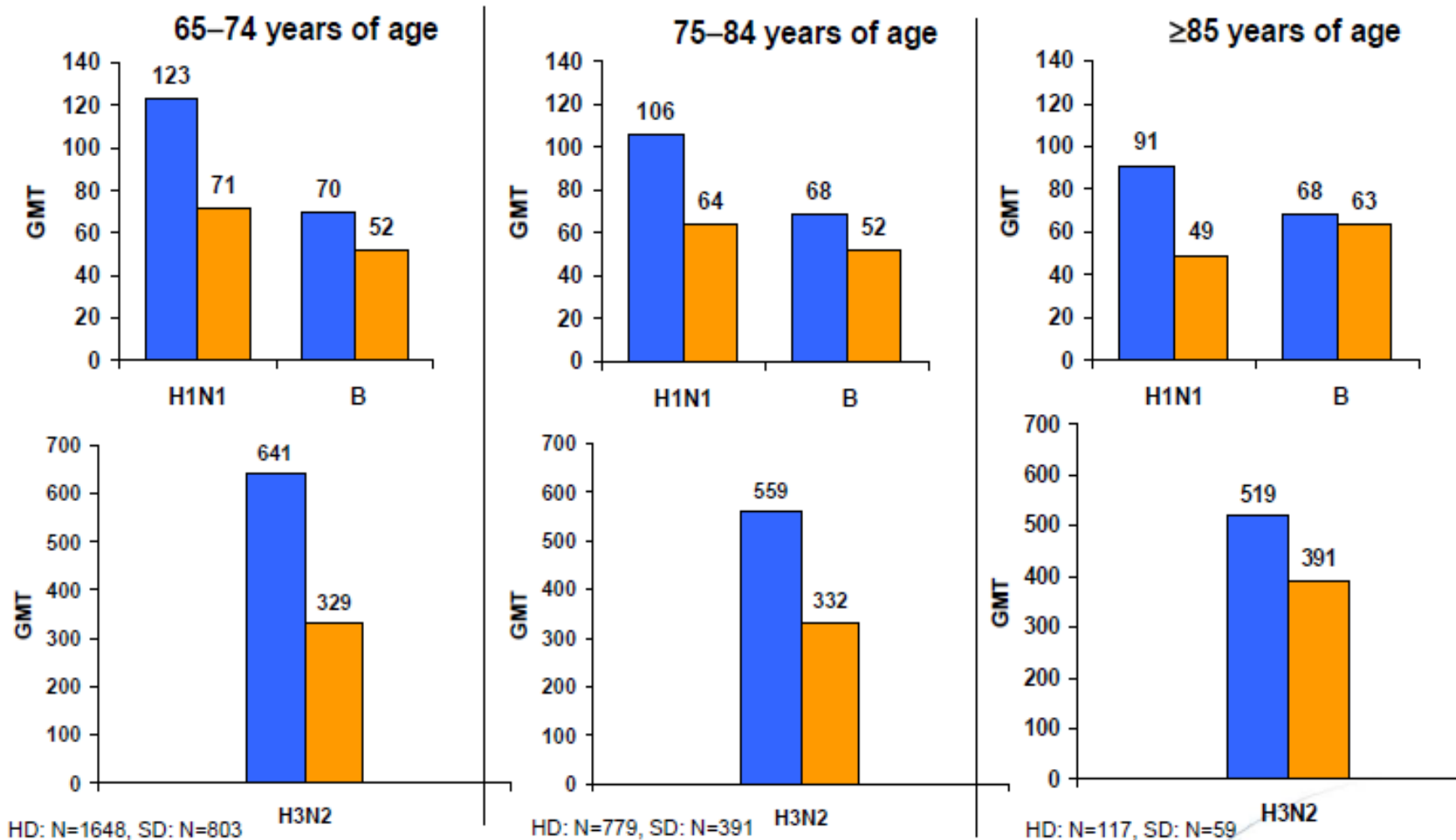
- Randomized, placebo-controlled, double-blind, multicenter phase III clinical trial (2,575 vaccine vs 1,262 placebo) > 65 years

Four-fold Seroconversion By HI		
	SD	HD
A/H1N1	23.1%	48.6%
A/H3N2	50.7%	69.1%
B/Malaysia	29.9%	41.8%

Falsey A, et al. JID 2009;200:172-180



■ High-Dose ■ Standard-Dose



Based on FDA criteria, the immunogenicity of Fluzone High-Dose vaccine was superior to Fluzone Standard-Dose vaccine

Strain	GMT Ratios HD / SD (95% CI)	4-Fold Rise Rates HD – SD (95% CI)	Met Pre-Defined Endpoints
H1N1	1.7 (1.6-1.8)	25% (22-28%)	Superiority
H3N2	1.8 (1.7-2.0)	18% (15-22%)	Superiority
B	1.3 (1.2-1.4)	12% (9-15%)	Noninferiority

Differences maintained for persons <75 yrs and ≥75 yrs of age, persons with or without a history of cardiovascular or respiratory disease, and both males and females

ACIP Recommendation HD-TIV

- **No preference for dose type in persons age 65 yrs and older**
 - Higher antibody levels
 - BUT, unknown level of efficacy compared to SD-TIV
- **FDA mandated an efficacy study**
 - 3 yr study of \approx 30,000 elderly subjects
 - Randomized, blinded trial of HD-TIV vs SD-TIV
 - Active assessment for influenza (PCR and viral culture)
 - AE's monitored for 180 days

Phase III–IV HD–TIV vs. SD–TIV (Elderly)

- Randomized, double–blind, active–controlled trial (n=31,989) over 2 flu seasons
- Lab–confirmed influenza infection
 - 1.4% in HD group
 - 1.9% in SD group
 - No difference in SAE
- HAI titers (seroprotection rate):
 - GMT's approx. 2–fold higher in HD group
- Take–home point: HD with 24% better relative efficacy!

Option 2: MF59–Adjuvanted Vaccine

- Trivalent, not quadrivalent vaccine
- Adjuvanted with MF59 (squalene in oil)
- Licensed in US November 2015

MF59 Flu Vaccine Immunogenicity

	FLUAD	AGRIFLU	
GMTs Against	GMT N^b = 3225-3227 (95% CI)	GMT N^b = 3256-3259 (95% CI)	GMT Ratio^c (95% CI)
A/California/7/2009-like (H1N1)	99 (93-106)	70 (66-75)	1.4 (1.32-1.49)
A/Perth/16/2009-like (H3N2)	272 (257-288)	169 (159-179)	1.61 (1.52-1.7)
B/Brisbane/60/2008-like	28 (26-29)	24 (23-26)	1.15 (1.08-1.21)



Strategies to Improve Influenza Immunization Rates

Barriers to Adult Immunization

- Lack of coordination of adult immunization activities
- Lack of public knowledge
- Lack of provider recommendations for immunization
- Financial impediments to vaccinations
- Lack of access to, and utilization of, health care services by adults
- Lack of utilization of reminder or assessment systems
- Racial/ethnic disparities
- Health literacy
- Concern about adverse events
- Religious barriers
- Lack of trust of the scientific community
- Belief in misguided non-medical advice

Strategies for Increasing Adult Vaccination Rates

- Standing Orders
- Computerized Record Reminder
- Chart Reminder
- Performance Feedback
- Home Visits
- Mailed/Telephoned Reminders
- Expanding Access in Clinical Settings
- Patient Education
- Personal Health Records
- Financial Incentives (HEDIS compliance)



Adapted from CDC. <http://www.cdc.gov/vaccines/recs/rate-strategies/adultstrat.htm>. Accessed March 2012.

4 Pillars of Successful Vaccination Programs

1. Convenience
2. Patient communication
3. Enhanced office vaccination systems
4. Motivation via an immunization champion



4pillarstoolkit.pitt.edu

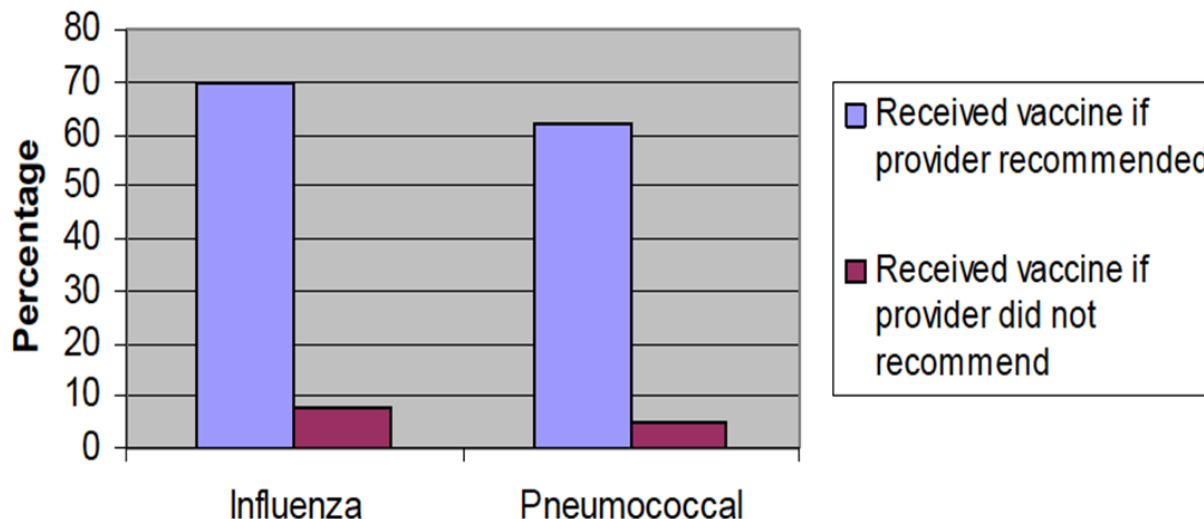
Pillar 1: Convenient Vaccination Programs

- **Extended vaccination season**
 - Starts when influenza vaccine arrives
 - Continues into the influenza disease season for unvaccinated
 - Season unpredictable & some benefit possible
 - 2 waves of influenza may occur
- **Express vaccination services**
 - Vaccination only services:
 - Dedicated evening or weekend vaccine-only services
 - Walk-in vaccination station
 - Nursing vaccination visits



Pillar 2: Patient Communication

- Convenient Vaccination Services
- Notification Methods
Autodialer; Email/text; Office posters/videos;
Answering service “on-hold” messages; Mail
- Physician recommendation is essential

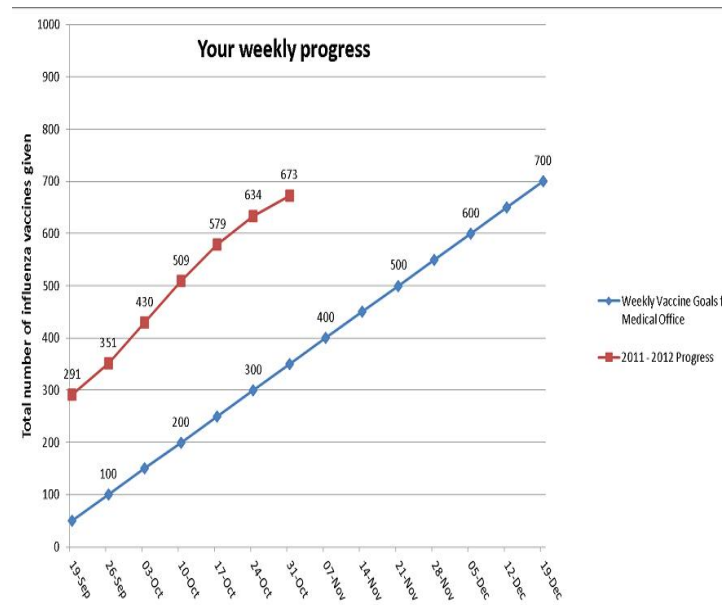


Pillar 3: Enhanced Office Vaccination Systems

- **Assessment of vaccination as a routine part of the office visit by nursing staff at check-in/rooming:**
 - Prompts in EMR
 - Health maintenance or immunization section review
 - Routinely address “Is vaccination status up to date?” as part of vital signs
- **Empowering staff to vaccinate by standing orders**
- **Combination of assessment and SOPs should reduce missed opportunities**

Pillar 4: Motivation

- Ongoing motivation is a key to success
 - Set goals for improving rates
 - Identify an Immunization Champion
 - Champion monitors weekly progress towards goals
 - Shares progress with team
 - Celebrate achievements
 - Consider rewards



Interventions Increasing Vaccine Rates

Intervention	Odss Ratio
Organization change	16
Provider reminder	3.8
Patient financial incentive	3.4
Provider education	3.2
Patient reminder	2.5
Patient education	1.3

Standing Orders Are Among the Most Effective Strategies

Standing Orders for Administering Seasonal Influenza Vaccine to Adults

Purpose: To reduce morbidity and mortality from seasonal influenza by vaccinating all adults who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

Policy: Under these standing orders, eligible nurses and other healthcare professionals (e.g., pharmacists), where allowed by state law, may vaccinate patients who meet any of the criteria below.

Procedure:

1. Identify adults with no history of influenza vaccination for the current influenza disease season.
2. Screen all patients for contraindications and precautions to influenza vaccine:
 - a. **Contraindications:** serious reaction (e.g., anaphylaxis) after ingesting eggs or after receiving a previous dose of influenza vaccine or an influenza vaccine component. For a list of vaccine components, go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/exipient-table-2.pdf. Do not give live attenuated influenza vaccine (LAIV; nasal spray) to an adult who is pregnant, is age 50 years or older, or who has chronic pulmonary (including asthma), cardiovascular (excluding hypertension), renal, hepatic, neurologic/neuromuscular, hematologic, or metabolic (including diabetes) disorders; immunosuppression, including that caused by medications or HIV.
 - b. **Precautions:** moderate or severe acute illness with or without fever; history of Guillain Barré syndrome within 6 weeks of a previous influenza vaccination; for LAIV only, close contact with an immunosuppressed person when the person requires protective isolation, receipt of influenza antivirals (e.g., amantadine, rimantadine, zanamivir, or oseltamivir) within the previous 48 hours or possibility of use within 14 days after vaccination.
3. Provide all patients with a copy of the most current federal Vaccine Information Statement (VIS). You must document in the patient's medical record or office log, the publication date of the VIS and the date it was given to the patient. Provide non-English speaking patients with a copy of the VIS in their native language, if available and preferred; these can be found at www.immunize.org/vis.
4. Administer 0.5 mL of injectable trivalent inactivated influenza vaccine (TIV) IM (22–25g, 1–1½" needle) in the deltoid muscle. (Note: A ½" needle may be used for adults weighing less than 130 lbs (<60 kg) for injection in the deltoid muscle *only* if the skin is stretched tight, subcutaneous tissue is not bunched, and the injection is made at a 90 degree angle.) Alternatively, healthy adults younger than age 50 years without contraindications may be given 0.2 mL of intranasal LAIV; 0.1 mL is sprayed into each nostril while the patient is in an upright position.
5. Document each patient's vaccine administration information and follow up in the following places:
 - a. **Medical chart:** Record the date the vaccine was administered, the manufacturer and lot number, the vaccination site and route, and the name and title of the person administering the vaccine. If vaccine was not given, record the reason(s) for non-receipt of the vaccine (e.g., medical contraindication, patient refusal).
 - b. **Personal immunization record card:** Record the date of vaccination and the name/location of the administering clinic.
6. Be prepared for management of a medical emergency related to the administration of vaccine by having a written emergency medical protocol available, as well as equipment and medications.
7. Report all adverse reactions to influenza vaccine to the federal Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov or (800) 822-7967. VAERS report forms are available at www.vaers.hhs.gov.

This policy and procedure shall remain in effect for all patients of the _____ until rescinded or until _____ (date).
(name of practice or clinic)

Medical Director's signature: _____ Effective date: _____

- Nonphysicians offer and administer vaccinations
- Established with physician approved policies and protocols
- Locations:
 - Clinics and hospitals
- www.immunize.org/standingorders
- www.immunization.org/standingorders

Provider Assessment and Performance Feedback

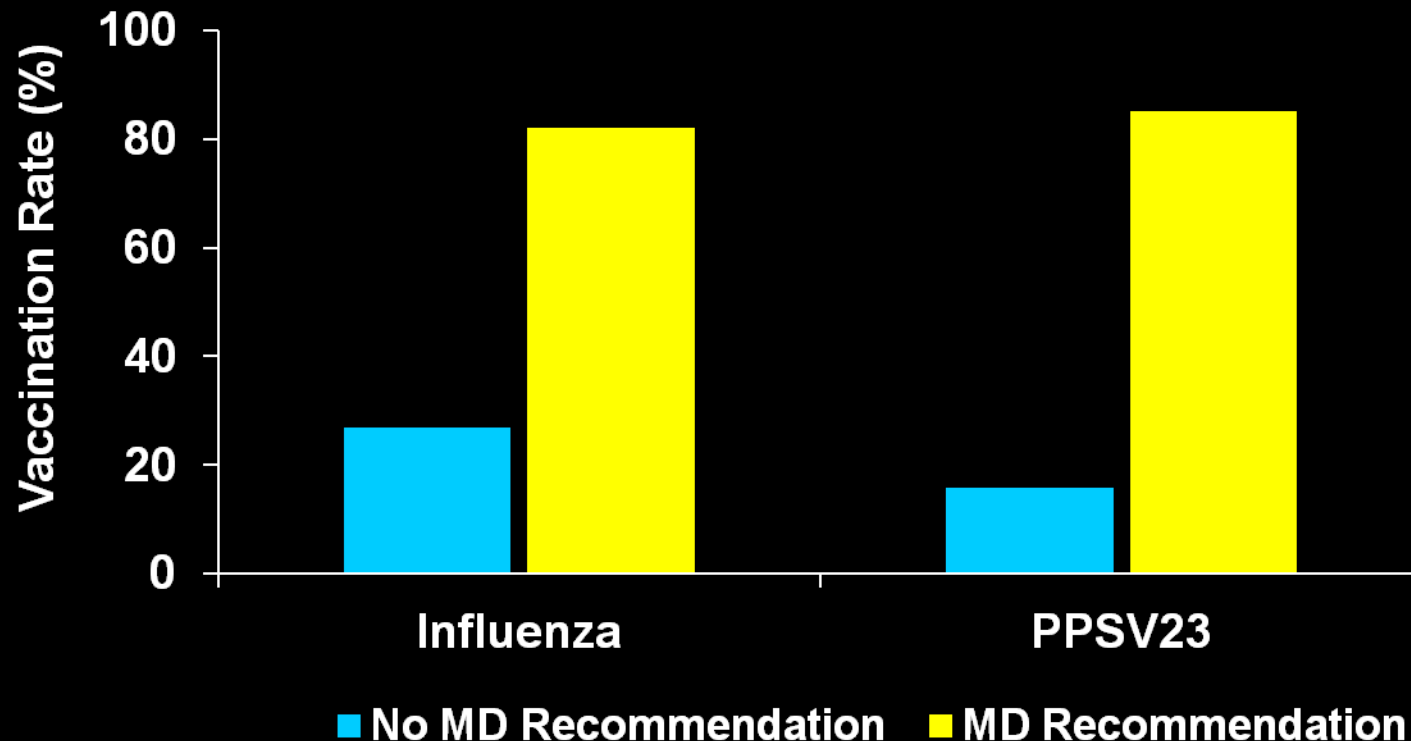
- Retrospectively assess the delivery of vaccine(s)
- Incorporates principles of continuous improvement
- AFIX
www.cdc.gov/vaccines/programs/afix/index.html
 - **A**ssessment
 - **F**eedback
 - **I**ncentives
 - e**X**change
- Comprehensive Clinic Assessment Software Application (CoCASA)
<http://www.cdc.gov/vaccines/programs/cocasa/index.html>
- Immunization Information System (IIS)

The Power of a Clinician's Recommendation for Influenza Vaccine

- A clinician's recommendation for influenza vaccine is a strong predictive factor for immunizing patients of all ages^{1,2}
- 2014 Standards for Adult Immunization from the National Vaccine Advisory Committee call on all health care providers to^{3,4}:
 - Incorporate immunization needs assessment into every clinical encounter
 - “Strongly recommend all immunizations that patients need” and
 - Administer vaccines or refer the patient to a provider who can immunize

Provider Recommendation Can Overcome Negative Attitudes Among Patients

Vaccination Rates Among High Risk Patients With Negative Attitudes





Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine



Editorial

Vaccine education spectrum disorder: the importance of incorporating psychological and cognitive models into vaccine education

Caroline M. Poland (M.A., NCC)
*Mental Health Counseling Center,
Taylor University, Upland, IN, USA*

Editor-in-Chief, VACCINE
Gregory A. Poland (MD, MACP)
*Mary Lowell Leary Professor of Medicine,
Mayo Clinic, Rochester, Minnesota, USA*
E-mail addresses: poland.caroline@gmail.com
(C.M. Poland), poland.gregory@mayo.edu
(G.A. Poland)

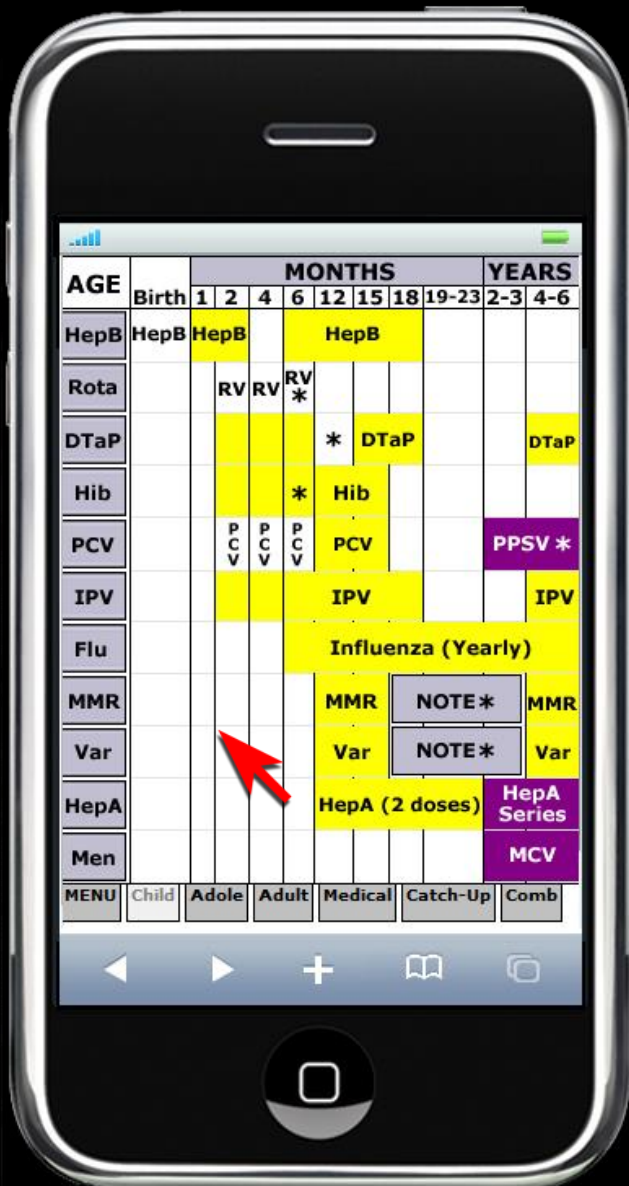
Cognitive Style-Based Strategies

Style	Examples	HCP Strategy
Denialist	"No data supporting vaccine safety" "No real risk of getting these diseases"	Provide materials, consistent messaging, avoid pressuring/persuading
Innumerate	Lack of understanding of probabilities and risks	Right brain communication methods, emotional appeals
Analytic	"What are the risks and benefits?"	Data-driven educational materials
Fear-based	"I'm just afraid that ... "	Data, reassurance, personalize, strong HCP recommendation
Low complexity	Conspiracy theories, erroneous information	Cognitive-appropriate educational materials, strong HCP recommendation
Heuristic	"I heard of a case of ... "	Face value appeals, strong HCP recommendation



Resources for Providers

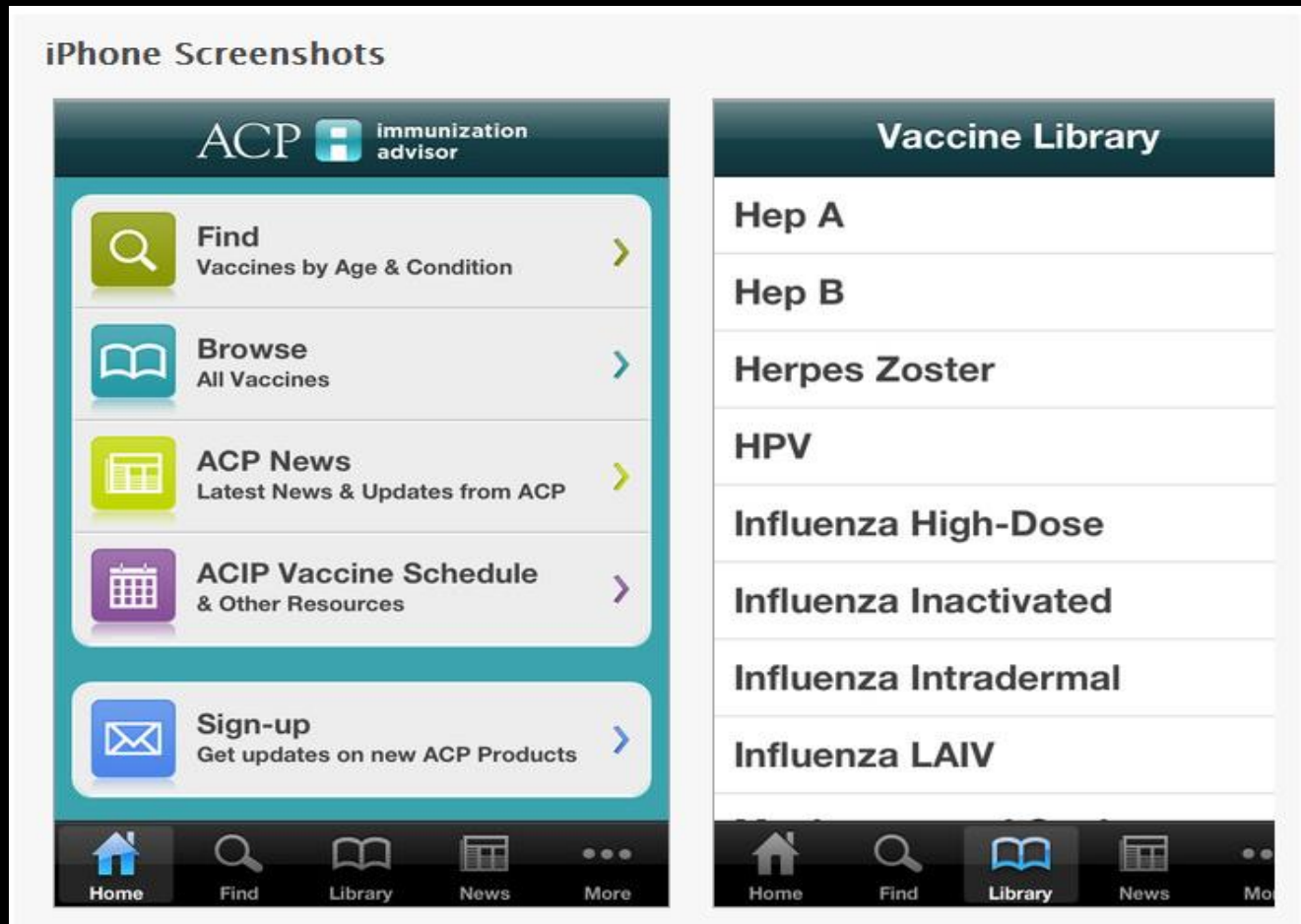
Shots Immunization App – Free



- For iPhone/iPod, iPad, Android, Blackberry, and PC
 - Select vaccine name for information on
 - High risk indications
 - Adverse reactions
 - Contraindications
 - Catch-up
 - Administration
 - Risk communication
 - Epidemiology
 - www.ImmunizationEd.org
 - Available at iTunes Store
- Content includes Childhood, Adolescent, and Adult Immunization Schedules for the US

ACP Immunization Advisor App by American College of Physicians

Free on iTunes



<http://itunes.apple.com/us/app/acp-immunization-advisor/id503636536>.
Accessed March 2012.

Receive Updates from the CDC via Email:

<http://www.cdc.gov/vaccines/news/news-pubs.htm>

Vaccines: News/2012 MMWRs related to immuni...

[CDC Home](#) | [About CDC](#) | [Press Room](#) | [A-Z Index](#) | [Contact Us](#)

CDC Department of Health and Human Services
Centers for Disease Control and Prevention

Search

Vaccines & Immunizations

[Vaccines Home](#) > [News and Media Resources](#) > 2012 Immunization News

Vaccine-Related Topics

- [Immunization Schedules](#)
- [Recommendations and Guidelines](#)
- [Vaccines & Preventable Diseases](#)
- [Basics and Common Questions](#)
- [Vaccination Records](#)
- [Vaccine Safety and Adverse Events](#)
- [For Travelers](#)
- [For Specific Groups of People](#)
- [Campaign Materials](#)

Additional Resources

- [Publications](#)
- [News and Media Resources](#)
 - [News](#)
 - [Newsletters](#)
 - [For the Media](#)
- [Calendars and Events](#)
- [Education and Training](#)
- [Programs and Tools](#)
- [Statistics and Surveillance](#)
- [Partners' & Related Sites](#)
- [About NCIRD](#)

Contact CDC

For immunization information, call the CDC-INFO Contact Center at:

News and Media Resources:

2012 Immunization News

News archives:
[2011](#) | [2010](#) | [2009](#) | [2008](#) | [2007](#) | [2006](#)

On This Page:
[JAN](#) | [FEB](#)

Readers can follow MMWR on  [Facebook](#) and on  [Twitter](#)

 [Get Email Updates](#)

February 2012

- MMWR* February 24, 2012, Vol 61 / No. 07**
[Influenza Vaccination Coverage Among Pregnant Women — 29 States and New York City, 2009–10 Season](#)
This report provides estimates from 29 states and New York City (NYC) for women who had live births during September 2009–May 2010...
- MMWR* February 10, 2012, Vol 61 / No. 05**
[Erratum: Vol. 61, No. 5 for the MMWR: Recommended Immunization Schedules for Persons Aged 0 Through 18 Years - United States, 2012](#)
These schedules summarize recommendations for currently licensed vaccines for children ages 0 through 6 years, 7 through 18 years, plus catch-up schedule, and include recommendations in effect as of December 23, 2011...
- MMWR* February 3, 2012, Vol 61 / No. 04**
[Adult Vaccination Coverage - United States, 2010](#)
This report summarizes the results of that analysis for pneumococcal, hepatitis A, hepatitis B, herpes zoster (shingles), and human papillomavirus (HPV) vaccines, as well as tetanus antigen-containing vaccines (including tetanus, diphtheria...
- MMWR* February 3, 2012, Vol 61 / No. 04**
[Erratum: Vol. 61, No. 4 for the MMWR:](#)

Email Updates from the Immunization Action Coalition: <http://www.immunize.org/subscribe/>

Subscribe to Immunization Action Coalition Publications - Windows Internet Explorer

http://www.immunize.org/subscribe/

File Edit View Favorites Tools Help

Convert Select

Subscribe to Immunization Action Coalition Publications

immunize.org | vaccineinformation.org | izcoalitions.org

Search

Immunization Action Coalition

Vaccination Information for Healthcare Professionals

[Subscribe](#) | [Support IAC](#) | [Shop IAC](#) | [Photos](#) | [Videos](#) | [Press Room](#) | [About Us](#) | [Contact Us](#)

[Needle Tips](#) | [Vaccinate Adults](#) | [IAC Express](#) | [Ask Experts](#) | [Diseases & Vaccines](#) | [Unprotected People](#) | [Mandates](#) | [Resources](#) | [VISs](#)




IAC Publications

- ▶ IAC Home
- ▶ **SUBSCRIBE**
- ▶ Needle Tips
- ▶ Vaccinate Adults
- ▶ Vaccinate Women
- ▶ IAC Express
- ▶ Privacy Policy

Subscribe to IAC - Periodicals and email news service - all free!

Up-to-date immunization information - Sign up today!

Subscription selections - Join the nearly 40,000 subscribers!



Please check (or leave checked) the box next to one or more of the following online periodicals or email news service. Select each product you wish to receive even if you already subscribe to it. **At least one box must be checked:**

☒ **IAC Express** Stay current! Every week, IAC Express features important immunization developments. The latest vaccine recommendations and licensures, important journal articles, practical vaccination resources, conference announcements, and more, delivered directly to your email box.

☒ **Needle Tips** IAC's online publication for health professionals who provide vaccination services.

Staying Current

- www.cdc.gov/emailupdates/index.html
 - Automatic notification of new information
- www.cdc.gov/vaccines
 - Can download **Adult Scheduler**
 - Can download **Shots 2016**
- www.immunizationed.org
- www.stfm.org
 - Home site for **Shots 2016**
- www.immunize.org
 - Site for **Immunization Action Coalition**
- www.cdc.gov/vaccines/recs/acip/default.htm
 - ACIP web site

Resources for Providers

- Immunization Schedules
www.cdc.gov/vaccines/recs/schedules/
www.immunizationed.org (point of care details; smartphone apps)
- ACIP recommendations & provisional recommendations
www.cdc.gov/vaccines/pubs/ACIP-list.htm
www.cdc.gov/vaccines/recs/provisional/default.htm
- The Immunization Action Coalition
www.immunize.org/
- The Guide to Community Preventive Services. Vaccine recommendations
www.thecommunityguide.org/vaccines/index.html
- Assessment, Feedback, Incentives, and Exchange (AFIX)
www.cdc.gov/vaccines/programs/afix/index.html
- Comprehensive Clinic Assessment Software Application (CoCASA)
<http://www.cdc.gov/vaccines/programs/cocasa/index.html>
- National Foundation for Infectious Diseases
www.nfid.org
- Vaccine Adverse Event Reporting System (VAERS)
vaers.hhs.gov/professionals/index



**“Knowing is not enough;
we must apply,**

**Willing is not enough; *we
must do*”**

- Goethe

Three Ingredients For Success:

1. I Can

2. I Will

3. I Q

Summary

- Older adults are at high risk of influenza–associated morbidity and mortality
- There are evidence–based ways to improve influenza vaccine coverage
- Educate adults about recommended vaccines
 - Address misconceptions and concerns about vaccine safety
 - Your recommendation makes a difference!
- Stay current with the immunization schedule and recommendations
- Establish an immunization champion in your practice
- Identify and address barriers
- Implement organizational and systems strategies



The Long Lost 11th Commandment:

“Thou shalt vaccinate!”

poland.gregory@mayo.edu

- **A special thanks to:**
 - Dr. Richard Zimmerman
 - Dr. David Greenberg
- **For sharing slides**